

CLAIMS

1. A wellbore effluent potentiometric sensor comprising
at least one reference electrode;
5 at least one measuring electrode; and
at least one connector between said reference and said
measuring electrode, wherein said electrodes and connector
form said potentiometric sensor exposed in operation to said
wellbore effluent via an opening or sample channel and
10 wherein said connector provides a continuous conductive path
between said reference and said measuring electrode in the
presence of hydrocarbon containing effluent.

15 2. A sensor according to claim 1 wherein the connector
comprises a porous material.

20 3. A sensor according to claim 2 wherein the connector comprise
an aqueous solution or gel.

25 4. A sensor according to claim 3 further comprising a discharge
element adapted to release an aqueous solution or gel into
the connector.

5. A sensor according to claim 4 wherein the discharge element
25 is self-discharging in the wellbore.

6. A sensor according to claim 4 wherein the discharge element
is controlled by an external control unit.

30 7. A downhole tool for measuring characteristic parameter of
wellbore effluent comprising a potentiometric sensor having
at least one reference electrode;
at least one measuring electrode; and
35 at least one connector between said reference and said
measuring electrode, wherein said electrodes and connector
form said potentiometric sensor exposed in operation to said
wellbore effluent via an opening or sample channel and

wherein said connector provides a continuous conductive path between said reference and said measuring electrode in the presence of hydrocarbon containing effluent.

5 8. A downhole tool according to claim 8 wherein the connector comprises a porous material.

9. A downhole tool according to claim 7 wherein the connector comprises an aqueous solution or gel.

10 10. A downhole tool according to claim 9 further comprising a discharge element adapted to release an aqueous solution or gel into the connector.

15 11. A downhole tool according to claim 10 wherein the discharge element is self discharging in the wellbore.

12. A downhole tool according to claim 11 wherein the discharge element is controlled by an external control unit.

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